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Exercise - I (Conceptual Questions) Build Up Your Understanding

MALE AND FEMALE REPRODUCTIVE ORGAN

1. *Capsella* is angiosperm because it possess :-
(1) Naked Seed (2) Pollen grain
(3) Vascular tissue (4)Fruit/Covered seeds

2. Which part of the reproductive structure produces both enzyme & hormone?
(1) Archesporium (2) Middle layer
(3) Tapetum (4) Endothecium

3. Ubisch bodies are produced in:-
(1) Embryosac (2) Endothecium
(3) Pollen grain (4) Tapetum

4. Tapetum is :-
(1) Parietal in origin and is the inner most layer of anther wall
(2) Modified endothecium of anther wall
(3) Outer most layer of sporogenous tissue modification
(4) Parietal in origin and is the inner most layer of ovule wall

5. Example of polyploid tissue present in an angiosperm plant is:-
(1) Perisperm (2) Embryo
(3) Tapetum (4) Placenta

6. Pollen grain represents:-
(1) Female gametophyte
(2) Male gametophyte
(3) Sporophyte
(4) Anther

7. Anther is generally composed of:-
(1) One sporangium (2) Two sporangia
(3) Three sporangia (4) Four sporangia

8. How many cells or nuclei are present in mature male gametophyte of *Capsella*?
(1) One (2) Two
(3) Three (4) Many

9. How many and what type of male gametes are produced by the male gametophyte of *Capsella*?
(1) One, multi cilliated (2) Two, biciliated
(3) Two, multi ciliated (4) Two, non-motile

10. Ubisch bodies are associated with the development of:-
(1) Embryo (2) Pollen grains
(3) Endosperm (4) Embryo sac

11. Essential whorls of a flowers are :-
(1) Calyx and Corolla
(2) Corolla and Gynoecium
(3) Androecium and Gynoecium
(4) All of the above

12. Sporopollenin is found in :-
(1) Exine (2) Intine
(3) Cytoplasm (4) Nucleus

13. Microsporophyll of Angiosperms is known as:-
(1) Androecium (2) Anther
(3) Filament (4) Stamen

14. Main function of endothecium (in anther) is :
(1) Mechanical (2) Nutritive
(3) Dehiscence (4) Storage

15. Endothecium, middle layer and tapetum in anther are derived from :-
(1) Primary sporogenous cells
(2) Primary parietal cells
(3) Both
(4) None of the above

16. Which one is female gametophyte?
(1) Embryo (2) Embryosac
(3) Endosperm (4) Pistil

17. The functional megaspore in *Capsella* is always:-
(1) Micropylar (2) Chalazal
(3) All (4) Any

18. Obturators which help in fertilization are out growth of:-
(1) Pollen tube
(2) Stigma
(3) Placenta or funiculus
(4) Pollen grains

19. Filiform apparatus are found in:-
(1) Antipodal cell
(2) Egg cell
(3) Secondary nucleus
(4) Synergids

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20. Perisperm is:-
(1) Persistant nucellus in seed
(2) Ovule wall
(3) Ovule coat
(4) Fossil of haustoria

21. The plant in which G.B. Amici discovered pollen tube is:-
(1) *Capsella* (2) *Parthenium*
(3) *Portulaca* (4) *Pisum*

22. Megasporophyll is called:-
(1) Stamen (2) Carpel
(3) Ovary (4) Stigma

23. How many pollen sacs are present in a mature anther ?
(1) 4 (2) 1 (3) 3 (4) 2

24. Anatropous (Resupinate) type of ovule is :-
(1) Straight (2) Inverted
(3) Transverse (4) Coiled

25. The special features of the endothecium of anther of *Capsella* :–
(1) Radially elongated cells
(2) Thickening of α-cellulose
(3) Hygroscopic
(4) All of the above

26. Which of the following types of embryosac is mostly found in Angiosperm?
(1) Bisporic polygonum type
(2) Tetrasporic type
(3) Monosporic - onagrad type
(4) Monosporic - polygonum type

27. When hilum, chalaza and micropyle lie in one straight line then ovule is called:-
(1) Amphitropous (2) Orthotropous
(3) Campylotropous (4) Anatropous

28. The vegetative cell gives rise to:-
(1) Male gametes (2) Tube nucleus
(3) Pollen tube (4) Exine

29. 'Callase' enzyme which dissolve callose of tetrad of microspores to separate 4 microspores is provided by:-
(1) Pollen grains (2) Middle layer
(3) Tapetum (4) Endothecium

30. The primary endosperm nucleus in Polygonum type of embryosac is :-
(1) Haploid (2) Diploid
(3) Triploid (4) Tetraploid

31. Floriculture is related with :-
(1) Rearing of Bees (2) Embryo culture
(3) Tissue culture (4) Cultivation of flower

32. In Angioperms all the four microspores of tetrad are covered by a layer which is made up of :-
(1) Pectocellulose (2) Callose
(3) Cellulose (4) Sporopollenin

33. Monothecous anther is found in which family:-
(1) Malvaceae (2) Liliaceae
(3) Brassicaceae (4) Asteraceae

34. All the nuclei in polygonum type of embryo sac are :-
(1) Haploid
(2) Diploid
(3) Haploid and diploid
(4) Haploid and polyploid

35. In which family pollinia are found ?
(1) Papilionaceae
(2) Asteraceae
(3) Asclepiadaceae
(4) Apocyanaceae

36. Nucellus is :-
(1) Haploid (2) Polyploid
(3) Diploid (4) Triploid

37. The nutritive layer of microsporangia of *Capsella* is :-
(1) Endothecium
(2) Exothecium
(3) Sporogenous tissue
(4) Tapetum

38. That haploid cell which divides by mitosis to form embryosac is :-
(1) Megaspore mother cell
(2) Microspore mother cell
(3) Functional megaspore
(4) Non functional megaspore

39. Microspore mother cell produce microspores by :-
(1) Meiosis and Mitosis
(2) Mitosis
(3) Meiosis
(4) Mitosis and Amitosis

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40. Embryosac is represented by :-
(1) Megagametophyte
(2) Megasporophyll
(3) Microgametes
(4) Megaspore

41. Pollen grains are able to withstand extremes of temperature and dessication because their exine is composed of :–
(1) Cutin (2) Suberin
(3) Sporopollenin (4) Callose

42. Angiosperms have covered seeds due to presence of :-
(1) Stamen (2) Ovary
(3) Megasporophyll (4) Pollen sac

43. Annuals and Binnials flowers____in their life time :-
(1) Once (2) Twice
(3) Many (4) Three

POLLINATION, FERTILIZATION, ENDOSPERM, EMBRYO, SEED etc.

44. Outer seed coat is known as :-
(1) Aril (2) Testa
(3) Operculum (4) Caruncle

45. Which structure of the ovule is diploid:-
(1) Nucellus (2) Integuments
(3) Sec. nucleus (4) All of the above

46. Which type of growth movement is found in pollen tube?
(1) Geotropic (2) Chemotropic
(3) Hydrotropic (4) Chemotactic

47. When pollen grains of a flower are transferred to stigma of another flower of a different plant, the process is called:-
(1) Geitonogamy (2) Xenogamy
(3) Autogamy (4) Homogamy

48. Autogamy means:-
(1) Transfer of pollen from anthers to stigma of the same flowers
(2) Transfer of pollen from one flowers to another on the different plant
(3) Occurrence of male and female sex organ in the same flowers
(4) Germination of pollen

49. Maize is best example of :-
(1) Anemophily (2) Ornithophily
(3) Entomophily (4) Hydrophily

50. Which of the following promotes pollen germination and tube growth?
(1) Starch (2) Boron
(3) Calcium (4) Potassium

51. Polyembryony was first discovered by:-
(1) Rosenberg (2) Hofmeister
(3) Leeuwenhoek (4) Guha

52. Tegmen of the seed develops from:-
(1) Perisperm (2) Funiculum
(3) Inner integument
(4) Outer integument

53. Example of Hypohydrophily is :-
(1) *Vallisneria* (2) *Zostera*
(3) *Nelumbium* (4) *Hydrilla*

54. Pollination in ***Yucca*** plant takes place by :–
(1) Honey bee (2) Butter fly
(3) Pronuba moth (4) Bird

55. The main embryo is developed as a result of:-
(1) Pollination (2) Triple fusion
(3) Syngamy
(4) Fusion of two polar nuclei of an embryo sac

56. After fertilization the integument of ovule changes into :-
(1) Seed coat (2) Tegmen
(3) Fruit (4) Testa

57. After fertilization the seed is developed from:-
(1) Ovule (2) Ovary
(3) Nucellus (4) Endosperm

58. Double fertilization is unique character of :-
(1) Gentium (2) Adiantum
(3) Lilium (4) Sphagnum

59. After fertilization seed coat is formed by :-
(1) Chalaza (2) Ovule
(3) Integument (4) Embryo sac

60. The fusion product of secondary nucleus and male gamete is:-
(1) Nucellus
(2) Primary endosperm nucleus
(3) Zygote
(4) Secondary nucleus

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61. In pollination "Trap door mechanism" is found in :-
(1) *Salvia* (2) *Aristolochia*
(3) *Ficus* (4) *Yucca*

62. Water of coconut is:-
(1) Endosperm (2) Nucellus
(3) Endocarp (4) Mesocarp

63. The suspensor in *Capsella* develops from:-
(1) Apical cell
(2) Basal cell
(3) Chalazal cell
(4) Apical & basal cell both

64. Tigellum represents :-
(1) Testa
(2) Tegmen
(3) Both of the above
(4) Main axis of the embryo

65. The number of nuclei taking part in double fertilization are:-
(1) Two (2) Three
(3) Four (4) Five

66. In albuminous seed, the food is stored in:-
(1) Testa (2) Plumule
(3) Cotyledon (4) Endosperm

67. "Ruminate endosperm" is commonly found in seed of:-
(1) Euphorbiaceae (2) Cruciferae
(3) Palmae or Arecaceae (4) Compositae

68. In epigeal germination cotyledons come up above the soil due to growth of :-
(1) Radicle (2) Plumule
(3) Epicotyl (4) Hypocotyl

69. In which part of embryo maximum growth takes place in hypogeal germination :-
(1) Plumule (2) Radicle
(3) Epicotyl (4) Hypocotyl

70. In seeds, characterised by hypogeal germination, cotyledons generally do not becomes green because :-
(1) They lack mitochondria
(2) They developed very early
(3) They contain inhibitor
(4) They remain below the soil

71. Embryo of sunflower has :-
(1) Two cotyledons
(2) One cotyledon
(3) Eight cotyledons
(4) No cotyledon

72. Endosperm is formed during the double fertilization by :-
(1) Two polar nuclei and one male gamete
(2) One polar nuclei and one male gamete
(3) Ovum and male gamete
(4) Two polar nuclei and two male gametes

73. Adventive embryony in *mango* is due to :-
(1) Nucellus (2) Integuments
(3) Zygotic embryo (4) Fertilized egg

74. In Angiosperms pollen tube liberate their male gametes into the :-
(1) Central cell (2) Antipodal cells
(3) Egg cell (4) Synergid

75. The aleurone layer in maize grain is specially rich in :-
(1) Protein (2) Starch
(3) Lipids (4) Auxins

76. Anthesis is a phenomenon which refers to:–
(1) Formation of pollen
(2) Development of anther
(3) Opening of flower bud
(4) Reception of pollen by stigma

77. When the pollens of one flower falls on the stigma of another flower of the same plant then genetically it is known as :-
(1) Cleistogamy (2) Allogamy
(3) Autogamy (4) Dichogamy

78. What is the white part of green Coconut :-
(1) Endosperm
(2) Female gametophyte
(3) Nucellus
(4) Embryo

79. Entry of pollen tube through micropyle is called:-
(1) Porogamy (2) Syngamy
(3) Chalazogamy (4) Mesogamy

80. The constant feature of embryosac is :-
(1) Synergids (2) Central cell
(3) Antipodal cells (4) Egg cell

81. Endosperm of angiosperm is :-
(1) 2n (2) 3n (3) n (4) 4n

82. Select the odd statement regarding insect pollinated flowers?
(1) Flowers are large, colourful, fragrant
(2) Pollen grains are sticky
(3) Most of entomophilous plants are ornamental
(4) Most of insect pollination occurs by moth.

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83. Single shield shaped cotyledon of grass is known as :-
(1) Tigellum (2) Scutellum
(3) Coleoptile (4) Coleorhiza

84. Epicotyl has a shoot apex and few leaf primordia enclosed in a hollow foliar structure known as :-
(1) Coleoptile (2) Coleorhiza
(3) Scutellum (4) Tigellum

85. Which of the following is not present in embryo of gram?
(1) Radicle (2) Hypocotyl
(3) Epicotyl (4) Coleoptile

86. Free nuclear division in an angiosperm takes place during :-
(1) Pollen formation
(2) Endosperm formation
(3) Embryo formation
(4) Flower formation

87. The function of suspensor is :-
(1) To provide water
(2) To provide oxygen
(3) To push the embryo towards endosperm to provide more food
(4) To suck food

88. Endosperm is completely consumed by developing embryo before the seed maturation or ex non albuminous/non-endospermic seeds are found in:-
(1) Pea, ground nut, beans
(2) Coconut, castor
(3) Maize, wheat, pea
(4) Coconut, wheat

89. Seed dormancy allows the plants to :-
(1) Overcome unfavourable climatic condition
(2) Develop healthy plants
(3) Reduce viability
(4) Prevent deterioration of seeds

90. Which are the external conditions required for seed germination?
(1) Oxygen, carbon dioxide and suitable temperature
(2) Oxygen, light and suitable temperature, and CO_2
(3) Light, moisture and suitable temperature
(4) Oxygen, moisture and suitable temperature

EXERCISE-I (Conceptual Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	4	3	4	1	3	2	4	3	4	2	3	1	4	3	2
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	2	2	3	4	1	3	2	4	2	4	4	2	3	3	3
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	4	2	1	1	3	3	4	3	3	1	3	2	1	2	4
Question	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Answer	2	2	1	1	2	3	3	2	3	3	1	1	3	3	2
Question	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Answer	3	1	2	4	4	4	3	4	3	4	1	1	1	4	1
Question	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Answer	3	3	1	1	4	2	4	2	1	4	2	3	1	1	4

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Exercise - II (Previous Year Questions) AIPMT/NEET

AIPMT 2006

1. What would be the number of chromosomes in the cells of the aleurone layer in a plant species with 8 chromosomes in its synergids?
(1) 16 (2) 24 (3) 32 (4) 8

2. The arrangement of the nuclei in a normal embryosac in the dicot plants is:-
(1) 2 + 4 + 2 (2) 3 + 2 + 3
(3) 2 + 3 + 3 (4) 3 + 3 + 2

3. In a Cereal grain the single cotyledon of embryo is represented by:-
(1) Coleorrhiza (2) Scutellum
(3) Prophyll (4) Coleoptile

4. Long filamentous threads protruding at the end of a young cob of maize are :-
(1) Hairs (2) Anthers
(3) Styles (4) Ovaries

5. In which of the following fruits is the edible part the aril ?
(1) Litchi (2) Custard apple
(3) Pomegranate (4) Orange

AIPMT 2007

6. Male gametes in angiosperms are formed by the division of :-
(1) Microspore mother cell
(2) Microspore
(3) Generative cell
(4) Vegetative cell

7. Which one of the following is surrounded by a callose wall ?
(1) Pollen grain
(2) Microspore mother cell
(3) Male gamete
(4) Egg

AIPMT 2008

8. Unisexuality of flowers prevents :-
(1) Geitonogamy, but not xenogamy
(2) Autogamy and geitonogamy
(3) Autogamy, but not geitonogamy
(4) Both geitonogamy and xenogamy

9. Endosperm is consumed by developing embryo in the seed of :-
(1) Pea (2) Maize
(3) Coconut (4) Castor

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10. Which one of the following is resistant to enzyme action?
(1) Pollen exine (2) Leaf cuticle
(3) Cork (4) Wood fibre

11. What does the filiform apparatus do at the entrance into ovule?
(1) It brings about opening of the pollen tube
(2) It guides pollen tube from a synergid to egg
(3) It helps in the entry of pollen tube into a synergid
(4) It prevents entry of more than one pollen tube into the embryo sac

12. Which one of the following pairs of plant structures has haploid number of chromosomes?
(1) Nucellus and antipodal cells
(2) Egg nucleus and secondary nucleus
(3) Megaspore mother cell and antipodal cells
(4) Egg cell and antipodal cells

AIPMT 2009

13. An example of a seed with endosperm, perisperm, and caruncle is :-
(1) Castor (2) Cotton
(3) Coffee (4) Lily

AIPMT Pre. 2010

14. The scutellum observed in a grain of wheat or maize is comparable to which part of the seed in other monocotyledons ?
(1) Plumule (2) Cotyledon
(3) Endosperm (4) Aleurone layer

15. Apomictic embryos in *citrus* arise from :-
(1) Diploid egg,
(2) Synergids
(3) Maternal sporophytic tissue in ovule
(4) Antipodal cells

16. Wind pollinated flowers are :-
(1) Small, producing nectar and dry pollen
(2) Small, brightly coloured, producing large number of pollen grains
(3) Small, producing large number of dry pollen grains
(4) Large, producing abundant nectar and pollen

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17. Transfer of pollen grains from the anther to the stigma of another flower of the same plant is called :-
(1) Autogamy (2) Xenogamy
(3) Geitonogamy (4) Karyogamy

AIPMT Mains 2011

18. What is common between vegetative reproduction and Apomixis ?
(1) Both produces progeny identical to the parent.
(2) Both are applicable to only dicot plants.
(3) Both bypass the flowering phase.
(4) Both occur round the year.

19. In angiosperms, functional megaspore develops into :-
(1) Pollen sac (2) Embryo sac
(3) Ovule (4) Endosperm

AIPMT Pre. 2011

20. Filiform apparatus is a characteristic feature of :
(1) Suspensor (2) Egg
(3) Synergid (4) Zygote

21. Nucellar polyembryony is reported in species of :
(1) *Citrus* (2) *Gossypium*
(3) *Triticum* (4) *Brassica*

22. In which one of the following pollination is autogamous ?
(1) Geitonogamy (2) Xenogamy
(3) Chasmogamy (4) Cleistogamy

23. What would be the number of chromosomes of the aleurone cells of a plant with 42 chromosomes in its *root tip* cells ?
(1) 42 (2) 63 (3) 84 (4) 21

AIPMT Pre. 2012

24. The coconut water and the edible part of coconut are equivalent to :-
(1) Mesocarp (2) Embryo
(3) Endosperm (4) Endocarp

25. The gynoecium consists of many free pistils in flowers of :-
(1) *Papaver* (2) *Michelia*
(3) *Aloe* (4) *Tomato*

26. Both, autogamy and geitonogamy are prevented in:-
(1) Castor (2) Maize
(3) Papaya (4) Cucumber

27. Even in absence of pollinating agents seed-setting is assured in :-
(1) *Salvia* (2) Fig
(3) *Commellina* (4) *Zostera*

AIPMT Mains 2012

28. Plants with ovaries having only one or a few ovules, are generally pollinated by :-
(1) Birds (2) Wind
(3) Bees (4) Butterflies

29. Which one of the following statements is wrong ?
(1) Pollen grains in some plants remain viable for months.
(2) Intine is made up of cellulose and pectin.
(3) When pollen is shed at two - celled stage, double fertilization does not take place.
(4) Vegetative cell is larger than generative cell.

30. What is the function of germ pore?
(1) Initiation of pollen tube
(2) Release of male gametes
(3) Emergence of radicle
(4) Absorption of water for seed germination

NEET-UG 2013

31. Perisperm differs from endosperm in:-
(1) Its formation by fusion of secondary nucleus with several sperms
(2) Being a haploid tissue
(3) Having no reserve food
(4) Being a diploid tissue

32. Megasporangium is equivalent to :-
(1) Ovule (2) Embryo sac
(3) Fruit (4) Nucellus

33. Advantage of cleistogamy is :-
(1) Vivipary
(2) Higher genetic variability
(3) More vigorous offspring
(4) No dependence on pollinators

34. Seed coat is **not** thin, membranous in :-
(1) Gram (2) Maize
(3) Coconut (4) Groundnut

35. Which one of the following statements is correct?
(1) Tapetum nourishes the developing pollen
(2) Hard outer layer of pollen is called intine
(3) Sporogenous tissue is haploid
(4) Endothecium produces the micorspores

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AIPMT 2014

36. Geitonogamy involves :-
(1) fertilization of a flower by the pollen from another flower of the same plant.
(2) fertilization of a flower by the pollen from the same flower.
(3) fertilization of a flower by the pollen from a flower of another plant in the same population.
(4) fertilization of a flower by the pollen from a flower of another plant belonging to a distant population.

37. Male gametophyte with least number of cell is present in :-
(1) *Pteris* (2) *Funaria*
(3) *Lilium* (4) *Pinus*

38. Pollen tablets are available in the market for:-
(1) In vitro fertilization
(2) Breeding programmes
(3) Supplementing food
(4) Ex situ conservation

39. Function of filiform apparatus is to :-
(1) Recognize the suitable pollen at stigma
(2) Stimulate division of generative cell
(3) Produce nectar
(4) Guide the entry of pollen tube

40. Non-albuminous seed is produced in :-
(1) Maize (2) Castor
(3) Wheat (4) Pea

AIPMT 2015

41. Transmission tissue is characteristic feature of :-
(1) Solid style (2) Dry stigma
(3) Wet stigma (4) Hollow style

42. Which one of the following may require pollinators, but is genetically similar to autogamy?
(1) Xenogamy (2) Apogamy
(3) Cleistogamy (4) Geitonogamy

43. Which one of the following statements is not true?
(1) Pollen grains of some plants cause severe allergies and bronchial afflictions in some people
(2) The flowers pollinated by flies and bats secrete foul odour to attract them
(3) Honey is made by bees by digesting - pollen collected from flowers
(4) Pollen grains are rich in nutrients, and they are used in the form of tablets and syrups

44. The hilum is a scar on the :-
(1) Fruit, where it was attached to pedicel
(2) Fruit, where style was present
(3) Seed, where micropyle was present
(4) Seed, where funicle was attached

45. Which of the following are the important floral rewards to the animal pollinators?
(1) Nectar and pollen grains
(2) Floral fragrance and calcium crystals
(3) Protein pellicle and stigmatic exudates
(4) Colour and large size flower

RE-AIPMT 2015

46. Male gametophyte in angiosperms produces:-
(1) Three sperms
(2) Two sperms and a vegetative cell
(3) Single sperm and a vegetative cell
(4) Single sperm and two vegetative cells

47. Coconut water from a tender coconut is :-
(1) Degenerated nucellus
(2) Immature embryo
(3) Free nuclear endosperm
(4) Innermost layers of the seed coat

48. Filiform apparatus is characteristic feature of:
(1) Synergids (2) Generative cell
(3) Nucellar embryo (4) Aleurone cell

49. The wheat grain has an embryo with one large, shield-shaped cotyledon known as:-
(1) Coleoptile (2) Epiblast
(3) Coleorrhiza (4) Scutellum

50. Which one of the following fruits is parthenocarpic?
(1) Banana (2) Brinjal
(3) Apple (4) Jackfruit

51. In angiosperms, microsporogenesis and megasporogenesis :-
(1) occur in ovule
(2) occur in anther
(3) form gametes without further divisions
(4) involve meiosis

52. Flowers are unisexual in :-
(1) Onion (2) Pea
(3) Cucumber (4) China rose

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NEET-I 2016

53. The coconut water from tender coconut represents:-
(1) Endocarp
(2) Fleshy mesocarp
(3) Free nuclear proembryo
(4) Free nuclear endosperm

54. Proximal end of the filament of stamen is attached to the:-
(1) Anther
(2) Connective
(3) Placenta
(4) Thalamus or petal

55. Which one of the following statements is **not** true?
(1) Tapetum helps in the dehiscence of anther
(2) Exine of pollen grains is made up of sporopollenin
(3) Pollen grains of many species cause severe allergies
(4) Stored pollen in liquid nitrogen can be used in the crop breeding programmes

56. Cotyledon of maize grain is called :-
(1) plumule (2) coleorhiza
(3) coleoptile (4) scutellum

57. Seed formation without fertilization in flowering plants involves the process of :-
(1) Sporulation
(2) Budding
(3) Somatic hybridization
(4) Apomixis

58. Which of the following statements is **not** correct?
(1) Pollen grains of many species can germinate on the stigma of a flower, but only one pollen tube of the same species grows into the style.
(2) Insects that consume pollen or nectar without bringing about pollination are called pollen/nectar robbers.
(3) Pollen germination and pollen tube growth are regulated by chemical components of pollen interacting with those of the pistil.
(4) Some reptiles have also been reported as pollinators in some plant species.

TG: @Chalnaayaaar

NEET-II 2016

59. Which one of the following generates new genetic combinations leading to variation ?
(1) Sexual reproduction
(2) Nucellar polyembryony
(3) Vegetative reproduction
(4) Parthenogenesis

60. In majority of angiosperms: -
(1) Reduction division occurs in the megaspore mother cells
(2) A small central cell is present in the embryo sac
(3) Egg has a filiform apparatus
(4) There are numerous antipodal cells

61. Pollination in water hyacinth and water lily is brought about by the agency of :-
(1) Birds (2) Bats
(3) Water (4) Insects or wind

62. The ovule of an angiosperm is technically equivalent to :-
(1) Megaspore mother cell
(2) Megaspore
(3) Megasporangium
(4) Megasporophyll

63. Match **column-I** with **column-II** and select the correct option using the codes given below :-

Column-I		Column-II	
(a)	Pistils fused together	(i)	Gametogenesis
(b)	Formation of gametes	(ii)	Pistillate
(c)	Hyphae of higher Ascomycetes	(iii)	Syncarpous
(d)	Unisexual female flower	(iv)	Dikaryotic

	a	b	c	d
(1)	i	ii	iv	iii
(2)	iii	i	iv	ii
(3)	iv	iii	i	ii
(4)	ii	i	iv	iii

NEET(UG) 2017

64. Functional megaspore in an angiosperm develops into ?
(1) Endosperm (2) Embryo sac
(3) Embryo (4) Ovule

65. Attractants and rewards are required for :-
(1) Entomophily (2) Hydrophily
(3) Cleistogamy (4) Anemophily

66. Plants which produce characteristic pneumatophores and show vivipary belong to:
(1) Halophytes (2) Psammophytes
(3) Hydrophytes (4) Mesophytes

67. Flowers which have single ovule in the ovary and are packed into inflorescence are usually pollinated by:-
(1) Bee (2) Wind (3) Bat (4) Water

68. A dioecious flowering plant prevents both :-
(1) Autogamy and geitonogamy
(2) Geitonogamy and xenogamy
(3) Cleistogamy and xenogamy
(4) Autogamy and xenogamy

69. Double fertilization is exhibited by :-
(1) Algae (2) Fungi
(3) Angiosperms (4) Gymnosperms

NEET(UG) 2018

70. Which of the following flowers only once in its life-time ?
(1) Bamboo species (2) Jackfruit
(3) Mango (4) Papaya

71. Pollen grains can be stored for several years in liquid nitrogen having a temperature of:-
(1) –120°C (2) –80°C
(3) –196°C (4) –160°C

72. Double fertilization is :-
(1) Fusion of two male gametes of a pollen tube with two different eggs
(2) Fusion of one male gamete with two polar nuclei
(3) Fusion of two male gametes with one egg
(4) Syngamy and triple fusion

(5)

73. Which one of the following plants shows a very close relationship with a species of moth, where none of the two can complete its life cycle without the other?
(1) *Hydrilla* (2) *Yucca*
(3) Banana (4) *Viola*

NEET(UG) 2019

74. Is some plants, the female gamete develops into embryo without fertilization. This phenomenon is known as :-
(1) Autogamy (2) Parthenocarpy
(3) Syngamy (4) Parthenogenesis

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75. Which one of the following statements regarding post-fertilization development in flowering plants is **incorrect** ?
(1) Ovary develops into fruit
(2) Zygote develops into embryo
(3) Central cell develops into endosperm
(4) Ovules develop into embryo sac

76. Persistent nucellus in the seed is known as :-
(1) Chalaza (2) Perisperm
(3) Hilum (4) Tegmen

77. What is the fate of the male gametes discharged in the synergid?
(1) One fuses with the egg, other(s) degenerate(s) in the synergid.
(2) All fuse with the egg.
(3) One fuses with the egg, other(s) fuse(s) with synergid nucleus.
(4) One fuses with the egg and other fuses with central cell nuclei.

NEET(UG) 2019 (Odisha)

78. Which is the most common type of embryo sac in angiosperms ?
(1) Tetrasporic with one mitotic stage of divisions
(2) Monosporic with three sequential mitotic divisions
(3) Monosporic with two sequential mitotic divisions
(4) Bisporic with two sequential mitotic divisions

79. What type of pollination takes place in *Vallisneria*?
(1) Pollination occurs in submerged condition by water
(2) Flowers emerge above surface of water, and pollination occurs by insects.
(3) Flowers emerge above water surface, and pollen is carried by wind.
(4) Male flowers are carried by water currents to female flowers at surface of water

80. In which one of the following, both autogamy and geitonogamy are prevented?
(1) Wheat (2) Papaya
(3) Castor (4) Maize

TG: @Chalnaayaaar

NEET(UG) 2020

81. In water hyacinth and water lily, pollination takes place by :-
(1) insects and water (2) insects or wind
(3) water currents only (4) wind and water

82. The body of the ovule is fused within the funicle at:-
(1) Chalaza (2) Hilum
(3) Micropyle (4) Nucellus

83. The plant parts which consist of *two generations* one within the other :-
(a) Pollen grains inside the anther
(b) Germinated pollen grain with two male gametes
(c) Seed inside the fruit
(d) Embryo sac inside the ovule
(1) (a) and (d) (2) (a) only
(3) (a), (b) and (c) (4) (c) and (d)

NEET(UG) 2020 (COVID-19)

84. Which of the following is **incorrect** for wind - pollinated plants ?
(1) Well exposed stamens and stigma
(2) Many ovules in each ovary
(3) Flowers are small and not brightly coloured
(4) Pollen grains are light and non-sticky

85. Vegetative propagules in Agave is termed as :-
(1) Rhizome (2) Bulbil
(3) Offset (4) Eye

86. Male and female gametophytes do not have an independent free living existence in :-
(1) Pteridophytes (2) Algae
(3) Angiosperms (4) Bryophytes

NEET(UG) 2021

87. The term used for transfer of pollen grains from anthers of one plant to stigma of a different plant which, during pollination, brings genetically different types of pollen grains to stigma, is :-
(1) Xenogamy (2) Geitonogamy
(3) Chasmogamy (4) Cleistogamy

TG: @Chalnaayaaar

88. A typical angiosperm embryo sac at maturity is :-
(1) 8-nucleate and 7-celled
(2) 7-nucleate and 8-celled
(3) 7-nucleate and 7-celled
(4) 8-nucleate and 8-celled

89. In some members of which of the following pairs of families, pollen grains retain their viability for months after release ?
(1) Poaceae ; Rosaceae
(2) Poaceae; Leguminosae
(3) Poaceae; Solanaceae
(4) Rosaceae ; Leguminosae

NEET-(UG) 2022

90. Identify the incorrect statement related to Pollination:-
(1) Pollination by wind is more common amongst abiotic pollination
(2) Flowers produce foul odours to attract flies and beetles to get pollinated
(3) Moths and butterflies are the most dominant pollinating agents among insects
(4) Pollination by water is quite rare in flowering plants

91. Given below are two statements:-
Statement I :
Cleistogamous flowers are invariably autogamous
Statement II :
Cleistogamy is disadvantageous as there is no chance for cross pollination.
In the light of the above statements, choose the correct answer from the options given below:
(1) Both Statement I and Statement II are incorrect
(2) Statement I is correct but Statement II is incorrect
(3) Statement I is incorrect but Statement II is correct
(4) Both Statement I and Statement II are correct

Re-NEET-(UG) 2022

92. The residual persistent part which forms the perisperm in the seeds of beet is :-
(1) Calyx (2) Endosperm
(3) Nucellus (4) Integument

93. Which of the following can be expected if scientists succeed in introducing apomictic gene into hybrid varieties of crops ?
(1) Polyembryony will be seen and each seed will produce many plantlets
(2) Seeds of hybrid plants will show longer dormancy
(3) Farmers can keep on using the seeds produced by the hybrids to raise new crop year after year
(4) There will be segregation of the desired characters only in the progeny

94. To ensure that only the desired pollens fall on the stigma in artificial hybridization process:-
(a) the female flower buds of plant producing unisexual flower need not be bagged.
(b) there is no need to emasculate unisexual flowers of selected female parent
(c) emasculated flowers are to be bagged immediately after cross pollination
(d) emasculated flowers are to be bagged after removal of anthers
(e) bisexual flowers, showing protogyny are never selected for cross
Choose the correct answer from the options given below :
(1) (a), (b) and (c) only
(2) (b), (c) and (d) only
(3) (b), (c) and (e) only
(4) (a), (d) and (e) only

EXERCISE-II (Previous Year Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	2	2	2	3	1	3	2	3	1	1	3	4	1	2	3
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	3	3	1	2	3	1	4	2	3	2	3	3	2	3	1
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	4	1	4	3	1	1	3	3	4	4	1	4	3	4	1
Question	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Answer	2	3	1	4	1	4	3	4	4	1	4	4	1	1	1
Question	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Answer	4	3	2	2	1	1	2	1	3	1	3	4	2	4	4
Question	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Answer	2	4	2	4	2	2	2	1	2	2	3	1	1	4	3
Question	91	92	93	94											
Answer	4	3	3	2											

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Exercise - III Master Your Understanding

EXERCISE-III(A) (NCERT BASED QUESTIONS)

1. Each cell of sporogenous tissue is potential pollen or microspore mother cell; Division taking place in sporogenous cell is :-
(1) Meiosis (2) Mitosis
(3) Endomitosis (4) Amitosis

2. In over 60% of angiosperms pollen grains are shed at :-
(1) One celled stage
(2) Three nuclei stage
(3) Two celled stage
(4) Three celled stage

3. Pollen grains of many species cause severe allergies & bronchial afflictions in some people often leading to chronic respiratory disorder such as :-
(1) Asthma (2) Bronchitis
(3) Both 1 & 2 (4) Emphysema

4. In a pollen grain the small cell is spindle shaped with dense cytoplasm is :-
(1) Vegetative cell (2) Generative cell
(3) Tube cell (4) All

5. The innermost wall layer of anther is tapetum; the main function of tapetum is :-
(1) Divison (2) Support
(3) Nutrition (4) Protection

6. Two non motile male gametes in angiosperms are produced by :-
(1) Generative cell
(2) Microspore mother cell
(3) Vegetative cell
(4) Tube cell

7. Which of the following haploid structure is present in male plant of papaya?
(1) Antipodal cell
(2) Microspore mother cell
(3) Generative cell
(4) 1 & 3 both

8. Pollen grain represents:-
(1) Female gametophyte
(2) Megasporangium
(3) Male gametophyte
(4) Sporophyte

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9. A typical angiosperm embryo sac at maturity is:
(1) 7 celled - 8 nucleated
(2) 9 celled - 7 nucleated
(3) 3 celled - 3 nucleated
(4) 2 celled - 2 nucleated

10. Arising from placenta is megasporangium which is commonly known as :-
(1) Ovule (2) Ovary
(3) Ovarian cavity (4) Stamen

11. Transfer of pollen grains from the anther to the stigma of another flower of same plant is called :-
(1) Xenogamy (2) Autogamy
(3) Geitonogamy (4) Allogamy

12. The part of pistil which acts as landing platform for pollen grain is :-
(1) Stigma (2) Style
(3) Ovule (4) Ovary

13. In angiosperms functional megaspore is generally situated at :-
(1) Micropylar end (2) Chalazal end
(3) Both (4) None

14. Micropyle **in seed** helps in the entry of:-
(1) Male gamete (2) Pollen tube
(3) Water & air (4) All

15. The type of cells under going meiosis in the flowers are:-
(1) Microspore mother cells & megaspore mother cell
(2) Epidermal cells
(3) Tapetal cells
(4) Placental cells

16. Synergids help in:-
(1) Pollen tube entry into embryo sac
(2) Endosperm formation
(3) Embryosac nutrition
(4) Both 1 & 3

17. Chasmocleistogamous flowers are present in:-
(1) *Viola* (common pansy)
(2) *Oxalis*
(3) *Commelina*
(4) All of the above

18. Although in most of species fruits are result of fertilisation, there are a few species in which fruit develops without fertilisation - process is known as:-
(1) Parthenocarpy (2) Parthenogenesis
(3) Amphimixis (4) Apomixis

19. One of the male gamete moves towards the egg cell & fuses with it, the process is known as:
(1) Syngamy (2) Triple fusion
(3) Double fertilization (4) Autogamy

20. Nucellar polyembryony is reported in species of:-
(1) *Citrus* (2) Mango
(3) Both 1 & 2 (4) *Capsella*

21. When embryo develops from a haploid cell of embryosac, other than egg cell, the process is known as:-
(1) Apogamy
(2) Apospory
(3) Adventive embryony
(4) Diplospory

EXERCISE-III (B) (ANALYTICAL QUESTIONS)

22. Which of the following are crucial for the storage of seeds ?
(1) Rehydration (2) Dehydration
(3) Seed dormancy (4) Both 2 and 3

23. The function of suspensor is:-
(1) To provide water
(2) To provide oxygen
(3) To push the embryo towards endosperm to provide more food
(4) To store food

24. Single shield shaped cotyledon of grass is known as:-
(1) Tigellum (2) Scutellum
(3) Coleoptile (4) Coleorrhiza

25. Epicotyl has a shoot apex and few leaf primordia enclosed in a hollow foliar structure known as :-
(1) Coleoptile (2) Coleorrhiza
(3) Scutellum (4) Tigellum

26. Non albuminous seeds are present in :-
(1) *Pisum* (Pea)
(2) *Arachis* (Ground nut)
(3) Both
(4) Maize

27. The coconut water from tender coconut that you are familiar with is :-
(1) Nuclear endosperm
(2) Cellular endosperm
(3) Helobial endosperm
(4) All of the above

28. Endosperm development precedes embryo development, the endosperm of angiospermic plant is: -
(1) Triploid (2) Diploid
(3) Haploid (4) Tetraploid

29. Which of the following structure is not present in embryo of gram?
(1) Radicle (2) Hypocotyl
(3) Epicotyl (4) Coleoptile

30. The portion of embryonal axis below the level of cotyledon is known as: -
(1) Coleoptile (2) Hypocotyl
(3) Epicotyl (4) Coleorrhiza

31. Double fertilization is essential for the formation of:-
(1) Perisperm (2) Seed coat
(3) Endosperm (4) Nucellus

32. Remnant of nucellus is known as :-
(1) Scutellum (2) Pericarp
(3) Tigellum (4) Perisperm

33. Perisperm is present in :-
(1) Beet (2) Black pepper
(3) Both 1 and 2 (4) All angiosperms

34. Apomixis term was coined by:-
(1) Leeuwenhoek
(2) Winkler
(3) Juel and Murbeck
(4) Nawaschin and Guignard

35. Seeds are produced without fertilization in some members of :-
(1) Grasses and pulses (2) Asteraceae
(3) Fabaceae (4) Orchidaceae

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36. Parthenogenesis occurs when :-
(1) Embryo is formed without the fusion of egg and sperm
(2) Embryo is formed by the fusion of egg and sperm
(3) Embryo is formed from nucellar cell
(4) Sperm produces the embryo directly

37. In a type of apomixis which is known as adventive embryony, embryos develop directly from the :-
(1) Nucellus or integuments
(2) Synergids or antipodals of an embryosac
(3) Accessory embryosacs in the ovule
(4) Zygote

38. Development of male gametophyte is :-
(1) In-vivo (2) In-situ
(3) Both (4) In-vitro

39. Proliferation of integumentary cells at the micropylar region of the ovule in castor develops:-
(1) Aril (2) Funicle
(3) Caruncle (4) Apophysis

40. Just before fertilization the diploid structure in the ovule of *Capsella* is: -
(1) Pollen tube
(2) Nucellus/ Sec. nucleus
(3) Synergids (4) Antipodals

41. Free nuclear division in an angiosperm takes place during:-
(1) Pollen formation
(2) Endosperm formation
(3) Embryo formation
(4) Flower formation

42. Protandry is the situation when :-
(1) Anther matures later than the stigma of flower
(2) Anther matures earlier than the stigma of flower
(3) Anther and stigma mature at the same time
(4) All of the above

43. The anterior end of pollen tube burst by the process of ____ in embryo sac:-
(1) Imbibition (2) Exosmosis
(3) Enzymatic action (4) Endosomosis

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44. In angiosperms Haploid, diploid and triploid conditions respectively can be traced in :-
(1) Egg, Nucellus, Endosperm
(2) Antipodal, Egg, Endosperm
(3) Endosperm, Nucellus, Synergids
(4) Antipodal, Synergids & Integuments

45. If the leaf of *Capsella* has 46 number of chromosomes then how many chromosomes number will be there in endosperm :-
(1) 46 (2) 23 (3) 69 (4) 138

46. If the nucellus cell of an Angiosperm contains 24 chromosomes the number of chromosomes present in pollen grain, endosperm & embryo will be:-
(1) 24, 36, 24 (2) 12, 36, 24
(3) 12, 24, 36 (4) 24, 12, 12

47. In Angiosperm, if haploid number of chromosome is 12 then what will be the no. of chromosomes in integuments and synergids:-
(1) 12, 12 (2) 24, 12
(3) 24, 24 (4) 12, 24

48. In Angiosperm, if number of chromosomes in endosperm is 30, what will be the no. of chromosomes in nucellus :-
(1) 15 (2) 30 (3) 20 (4) 40

49. How many meiotic divisions are necessary for the formation of 100 functional megaspores:-
(1) 25 (2) 50 (3) 100 (4) 200

50. The seeds of which type of plant have no dormancy:-
(1) Xerophytes
(2) Mesophytes
(3) Halophytes and hydrophyte
(4) Mangroves

51. Ornithophily takes place in :-
(1) Yellow flower having nectaries
(2) Scented flower
(3) Flower with charming colour only
(4) Modified corolla

52. Anemophily type of pollination is found in :-
(1) *Salvia* (2) Bottle brush
(3) *Vallisneria* (4) Coconut

53. In grass what happens in microspore mother cell for the formation of mature pollen grain:-
(1) One meiotic and two mitotic divisions
(2) One meiotic and one mitotic division
(3) One meiotic division only
(4) One mitotic division only

54. In a Flowering plant, archesporium (archesporial cell) gives rise to:-
(1) Only the wall of the sporangium
(2) Both wall and the sporogenous cell
(3) Wall and the tapetum
(4) Only tapetum and sporogenous cells

55. When a diploid female plant is crossed with a tetraploid male plant, the ploidy of endosperm cells in the resulting seed will be:-
(1) Pentaploid (2) Diploid
(3) Triploid (4) Tetraploid

56. If diploid female plant is crossed with tetra ploid male plant. What would be ploidy level of seed coat: -
(1) 3n (2) n (3) 2n (4) 4n

57. Perispermic and endospermic seeds are found in :-
(1) Castor (2) Maize (3) Wheat (4) Rice

58. Double fertilization involves: -
(1) Fertilization of the egg by two male gametes
(2) Fertilization of two eggs in the same embryosac by two sperms brought by one pollen tube
(3) Fertilization of the egg and the central cell by two sperms (male gametes) brought by different pollen tubes
(4) Fertilization of the egg and the central cell by two sperms (male gametes) brought by the same pollen tube

59. How many times flowering takes place in biennial plants:-
(1) One (2) Twice
(3) Many (4) Three

60. Which part of the reproductive structure produces both enzyme & hormone :-
(1) Archesporium (2) Middle layer
(3) Tapetum (4) Endothecium

61. Ubisch bodies are produced in :-
(1) Embryosac (2) Endothecium
(3) Pollen grain (4) Tapetum

62. Tapetum is :-
(1) Parietal in origin and is the inner most layer of anther wall.
(2) Modified endothecium of anther wall
(3) Outer most layer of sporogenous tissue modification
(4) Parietal in origin and is the inner most layer of ovule wall

63. Ubisch bodies are associated with the development of :-
(1) Embryo (2) Pollen grains
(3) Endosperm (4) Embryo sac

64. Endothecium, middle layer and tapetum in anther are derived from :-
(1) Primary sporogenous cells
(2) Primary parietal cells
(3) Both (1) and (2)
(4) None of the above

65. How many cells or nuclei are present in mature male gametophyte of Capsella :-
(1) One (2) Two
(3) Three (4) Many

66. The plant in which G.B. Amici discovered pollen tube is :-
(1) Capsella (2) Parthenium
(3) Portulaca (4) Pisum

67. Pollen tube develops from :-
(1) Generative cell
(2) Male gametes
(3) Vegetative cell
(4) Vegetative nucleus

68. 'Callase' enzyme which dissolve callose of tetrad of microspores to separate 4 microspores is provided by:-
(1) Pollen grains (2) Middle layer
(3) Tapetum (4) Endothecium

69. Pollen grains are able to withstand extremes of temperature and dessication because their exine is composed of :–
(1) Cutin (2) Suberin
(3) Sporopollenin (4) Callose

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70. Go through the following statements:-
I. Flowers are small. They are often packed in inflorescence
II. Flowers are colourless, nectar less and odourless
III. Well exposed stamens
IV. Pollen grains are produced in large numbers which are light and non-sticky
V. Flower often have a single ovule in each ovary.
VI. Stigma is large and often feathery.
The above contrivances favour
(1) Cross pollination
(2) Anemophily (pollination by wind)
(3) Ornithophily (pollination by birds)
(4) Entomophily (pollination by insects)

71. Which of the following is the tallest flower?
(1) *Vallisneria* (2) *Rafflesia*
(3) *Amorphophallus* (4) *Zostera*

72. Endosperm is formed during the double fertilization by :-
(1) Two polar nuclei and one male gamete
(2) One polar nuclei and one male gamete
(3) Ovum and male gamete
(4) Two polar nuclei and two male gametes

73. In Angiosperms pollen tube liberate their male gametes into the :-
(1) Central cell (2) Antipodal cells
(3) Egg cell (4) Synergid

74. In which part of embryo maximum growth takes place in hypogeal germination: -
(1) Plumule (2) Radicle
(3) Epicotyl (4) Hypocotyl

75. In seeds, characterised by hypogeal germination, cotyledons generally do not becomes green because :-
(1) They lack mitochondria
(2) They developed very early
(3) They contain inhibitor
(4) They remain below the soil

76. Which of the following will lose its economic value if fruits are produced through parthenocarpy?
(1) Citrus (2) Banana
(3) Grapes (4) Pomegranate

77. In which method megaspore mother cell directly gives rise to an embryo sac without meiosis?
(1) Diplospory
(2) Adventive embryony
(3) Apospory
(4) Apogamy

78. Given below are two statements: -
Statement-I : When pollen grains are released from pollen sac and they land on stigma of pistil, it is called pollination.
Statement-II : Pollen tube enters into embryo sac where two male gametes fuse with female gamete.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Both Statement-I and II are correct.
(2) Statement-I is correct but statement-II is incorrect.
(3) Statement-I is incorrect and Statement-II is correct.
(4) Both Statement-I and Statement-II are incorrect.

79. Given below are two statements: -
Statement-I : A typical anther is tetrasporangiate.
Statement-II : A typical anther is dithecous.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Both Statement-I and II are correct.
(2) Statement-I is correct but statement-II is incorrect.
(3) Statement-I is incorrect and Statement-II is correct.
(4) Both Statement-I and Statement-II are incorrect.

80. Given below are two statements:-
Statement-I : Exine of pollen grain is made up of sporopollenin.
Statement-II : Intine helps in germination of pollen grain.

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In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Both Statement-I and Statement-II are correct.

(2) Statement-I is correct but statement-II is incorrect.

(3) Statement-I is incorrect and Statement-II is correct.

(4) Both Statement-I and II are incorrect.

81. Given below are two statements:-

Statement-I : To some extent viability of pollen grains depends upon prevailing temperature and humidity.

Statement-II : Viability is lost in few minutes only of the pollen grains of Solanaceae family.

In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Both Statement-I and II are correct.

(2) Statement-I is correct but statement-II is incorrect.

(3) Statement-I is incorrect and Statement-II is correct.

(4) Both Statement-I and Statement-II are incorrect.

82. Given below are two statements (for angiosperm plants) :-

Statement-I : A mature male gametophyte possess two male gametes.

Statement-II : A mature female gametophyte is 7-celled and 8 nucleated in typical angiosperms.

In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Both Statement-I and II are correct.

(2) Statement-I is correct but statement-II is incorrect.

(3) Statement-I is incorrect and Statement-II is correct.

(4) Both Statement-I and Statement-II are incorrect.

83. Given below are two statements; one is labelled as Assertion (A) and the other is labelled as Reason(R) :-

Assertion (A) : Geitonogamy is genetically same as autogamy.

Reason (R) : In Geitonogamy transfer of pollen grains occur from one plant to another plant.

In the light of the above statements, choose the most appropriate answer from the options given below :

(1) If (A) & (R) both are correct but (R) is not the correct explanation of (A).

(2) (A) is correct but (R) is incorrect.

(3) (A) is not correct but (R) is correct.

(4) If (A) & (R) both are correct and (R) is the correct explanation of (A).

84. Given below are two statements; one is labelled as Assertion (A) and the other is labelled as Reason(R) :-

Assertion (A) : Homogamy in receptivity by stigma and pollen release is essential for autogamy.

Reason (R) : Heterogamy increases the opportunities for successful allogamy.

In the light of the above statements, choose the most appropriate answer from the options given below :

(1) If (A) & (R) both are correct but (R) is not the correct explanation of (A).

(2) (A) is correct but (R) is incorrect.

(3) (A) is not correct but (R) is correct.

(4) If (A) & (R) both are correct and (R) is the correct explanation of (A).

85. Given below are two statements; one is labelled as Assertion (A) and the other is labelled as Reason(R) .

Assertion (A) : Loss of pollen grain occur maximum in anemophily.

Reason (R) : In this type of pollination, pollen grains move completely in non-directional form.

In the light of the above statements, choose the most appropriate answer from the options given below :

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(1) If (A) & (R) both are correct but (R) is not the correct explanation of (A).
(2) (A) is correct but (R) is incorrect.
(3) (A) is not correct but (R) is correct.
(4) If (A) & (R) both are correct and (R) is the correct explanation of (A).

86. Given below are two statements; one is labelled as Assertion (A) and the other is labelled as Reason(R) :-
Assertion (A) : In angiosperm plants, nuclear endosperm is most common.
Reason (R) : When formation of endosperm occur due to free nuclear division, is called cellular endosperm.
In the light of the above statements, choose the most appropriate answer from the options given below :
(1) If (A) & (R) both are correct but (R) is not the correct explanation of (A).
(2) (A) is correct but (R) is incorrect.
(3) (A) is not correct but (R) is correct.
(4) If (A) & (R) both are correct and (R) is the correct explanation of (A).

87. Identify the correct set of statements :-
(a) Wolfia is a microscopic plant belongs to angiosperms.
(b) Double fertilization is an unique event seen in gymnosperms.
(c) Male sex organs in angiosperm are called stamens, present in flowers.
(d) Total three male gametes participate in double fertilization.
Choose the correct answer from the given option below.
(1) all a, b, c, d are correct
(2) b, c and d are correct
(3) a, c and d are correct
(4) only a and c are correct

88. Identify the correct set of statements :–
(a) In gymnosperms seeds are not enclosed by fruits.
(b) Angiosperm plant's possess diplontic life cycle.
(c) Flower is the structure in which sexual reproductive organs of angiosperm are present.
(d) Endosperm formation in angiosperm is not a pre-fertilization event.
Choose the correct answer from the given options below :
(1) only b, c & d are correct
(2) b and c are correct
(3) a, b, c and d all are correct
(4) only a and c are correct

89. Identify the correct set of statements with respect to angiosperms:-
(a) A microsporophyll contains stigma, style and ovary
(b) All megaspores produced from megaspore mother cell take part in embryo sac formation.
(c) Hilum is the place where ovule joins with funicle
(d) Basal part of an ovule is represented as micropylar end
(e) Perisperm is present in black pepper.
Choose the correct answer from the options given below
(1) only c and e are correct
(2) a, b, c and e are correct
(3) c, d and e are correct
(4) only c is correct

90. Identify the correct set of statements for angiosperms:-
(a) Development of angiosperm seed occur inside the ovary / fruit
(b) Typical embryo sac in angiosperms is seven celled and eight nucleated
(c) Free nuclear divisions occur during embryogenesis in angiosperms
(d) Filliform apparatus present in ovule secrets chemicals, which attract pollen tube toward synergids
(e) Development of female gametophyte in typical angiosperms is monosporic.
Choose the correct answer from the given options below.
(1) a, d and e (2) b, d and e
(3) a, b, d and e (4) b, c, d and e

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Exercise - III ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	1	3	3	2	3	1	3	3	1	1	3	1	2	3	1
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	4	4	1	1	3	1	4	3	2	1	3	1	1	4	2
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	3	4	3	2	2	1	1	3	3	2	2	2	4	1	3
Question	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Answer	2	2	3	3	4	1	4	2	2	4	3	1	4	1	3
Question	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Answer	4	1	2	2	3	3	3	3	3	2	3	1	4	3	4
Question	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Answer	4	1	2	1	1	2	1	2	1	4	2	4	3	1	3